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EXAMINER
LEUNG, CHRISTINA Y

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/657,554	ARONSON ET AL.
	Examiner	**Art Unit**
	Christina Y. Leung	2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 16 September 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-38 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-38 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 10-5-05; 9-16-05.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 16 September 2005 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 4, 6, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levinson (US 5,019,769 A) in view of Swartz (US 6,021,947 A).

Regarding claims 1, 4, and 8, Levinson discloses a circuit (Figure 3) for controlling an optoelectronic transceiver having a laser transmitter 100 and a photodiode receiver 224, comprising:

memory (EEPROM 166; column 9, lines 1-35), including one or more memory arrays for storing information related to the transceiver in predefined locations of the memory, the stored information including digital values corresponding to current operating conditions of the optoelectronic transceiver, where the digital values include a temperature of the optoelectronic

transceiver (measured using temperature sensor 152; column 4, lines 36-40) and a laser bias current of the laser transmitter (column 5, lines 8-10), and

analog to digital conversion circuitry (multichannel A/D converter 170) for receiving at least one analog signal, the at least one analog signal corresponding to operating conditions of the optoelectronic transceiver, converting the at least one analog signal into at least one digital value, and storing the at least one digital value in at least one of the predefined locations in the memory (column 4, lines 20-49); and

an interface (including RS232 I/O port 200) configured to enable a host (computer 202) to read from host-specified locations within the memory, including the predefined locations of the memory, so as to obtain one or more of the digital values corresponding to current operating conditions of the optoelectronic transceiver (column 6, lines 40-46; column 15, lines 25-66).

Further regarding claims 1, 4, and 8, Levinson discloses that the memory 166 stores digital values corresponding to current operating conditions of the transceiver including temperature and bias current (column 9, lines 28-32) but does not specifically disclose storing current operating values of supply voltage, output power of the laser, or a received optical power of the photodiode.

However, Levinson does disclose obtaining these three measurements and discloses that the analog to digital conversion circuitry receives analog signals corresponding to these values and converts them to digital values. An internal supply voltage of the optoelectronic transceiver is measured at node "B" as shown in Figure 3 (column 5, lines 1-7); output power of the laser transmitter is measured using the output of back facet photodiode 116 (column 8, lines 5-8); and a received optical power of the photodiode receiver is measured using the output of peak detector

242 at the receiver (column 7, lines 31-37). Regarding claims 1, 4, and 8, it would have been obvious to a person of ordinary skill in the art to specifically further store these three values in addition to the ones already explicitly stored in the system disclosed by Levinson in order to provide the user with additional information about the conditions of the transceiver throughout its operating life.

Further regarding claims 1, 4, and 8, Levinson does not specifically disclose that the circuit is an integrated circuit. However, it is well known in the art that a circuit containing components such as memory or analog to digital conversion circuitry may be integrated, as Swartz in particular teaches (column 11, lines 3-22). It would have been obvious to a person of ordinary skill in the art to integrate the controller components disclosed by Levinson as taught by Swartz in order to manufacture the controlling circuit efficiently and compactly.

Further regarding claims 4 and 8 in particular, Levinson discloses control circuitry (including microcontroller 162 and multichannel D/A converter 180) configured to generate control signals to control operation of the laser transmitter in accordance with one or more values stored in the memory.

Further regarding both claims 1 and 4 in particular, Levinson discloses comparison logic configured to compare at least one of the digital values with a limit value to generate a flag value. Specifically, Levinson discloses that the microcontroller 162 includes logic configured to compare the digital values with limit values to produce indications that the device is failing (column 9, lines 1-35; column 10, lines 66-67; column 11, lines 1-11; column 12, lines 5-11). Examiner respectfully notes that such failure indications (which include sending a signal to turn on a failure indication LED, for example) are "flag values" (column 12, lines 5-11).

Further regarding both claims 1 and 4 in particular, Levinson discloses operation disable circuitry configured to disable operation of at least part of the optoelectronic transceiver in response to a signal based on the flag value. For example, Levinson discloses that when the temperature exceeds a limit, a part of the optoelectronic transceiver is shut down in response to this failure condition (column 9, lines 50-67; column 10, lines 1-4). Levinson do not explicitly label a part of their circuit as "operation disable circuitry," but Levinson clearly discloses circuitry that controls the optoelectronic device (including multichannel D/A converter 180 which sends signals to laser diode 100) and also discloses that the system may disable the device. It would be well understood in the art that Levinson inherently disclose that the circuitry for controlling the device is inherently configured to disable the device if desired.

Regarding claim 8 in particular, Levinson discloses that the control circuitry includes circuitry configured to adjust one or more control signals in accordance with an adjustment value stored in the memory by the host via the interface. Specifically, Levinson discloses that a user can input a desired parameter (an adjustment value) through the host computer, which stores the new value via the interface into the memory (column 15, lines 25-61).

Regarding claims 3 and 6, Levinson discloses that the limit value is dependent on a temperature of the optoelectronic transceiver (column 9, lines 50-67; column 10, lines 1-4).

Regarding claims 9 and 11, Levinson discloses that the adjustment value corresponds to a deviation from a configured operating condition of the optoelectronic transceiver and that the control circuitry is configured to adjust the one or more control signals by an amount specified by the adjustment value. Specifically, Levinson discloses that a user can input a desired

parameter (an adjustment value) through the host computer, which stores the new value via the interface into the memory (column 15, lines 25-61).

Regarding claim 10, Levinson discloses that the control circuitry is configured to adjust the one or more control signals by scaling the control signals. Although Levinson does not specifically use the term "scaling," it would be well understood in the art that a particular change caused by the stored adjustment value would translate to a corresponding change in one or more control signals sent to the hardware, wherein the change in the control signals would correspond to an upward or downward scaling of the signals.

4. Claims 12-21, 23-30, and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levinson.

Regarding claim 12, as similarly discussed above with regard to claim 8, Levinson discloses a method of controlling an optoelectronic transceiver (Figure 3) having a laser transmitter 100 and a photodiode receiver 124, comprising:

in accordance with instructions received from a host device (computer 202), enabling the host device to read from and write to host specified locations within a controller of the optoelectronic transceiver, the host specified locations including a set of predefined locations in which are stored digital values corresponding to current operating conditions of the optoelectronic transceiver, the stored digital values including a temperature of the optoelectronic transceiver (measured using temperature sensor 152; column 4, lines 36-40) and a laser bias current of the laser transmitter (column 5, lines 8-10),

receiving a plurality of analog signals from the laser transmitter and photodiode receiver, converting the receiving analog signals into digital values (using multichannel A/D converter

170), and storing the digital values in the controller, the converted digital values including the digital values corresponding to current operating conditions of the optoelectronic transceiver (column 4, lines 20-49); and

generating control signals (using microcontroller 162 and multichannel D/A converter 180) to control operation of the laser transmitter in accordance with one or more values stored in predefined memory mapped locations within the controller.

Further regarding claim 12, Levinson discloses testing operation of the device at a known deviation from a configured operating condition of the optoelectronic transceiver by adjusting one or more control signals in accordance with an adjustment value stored in the controller. Specifically, Levinson discloses that a user can input a desired parameter (an adjustment value) through the host computer, which stores the new value via the interface into the memory (column 15, lines 25-61).

Further regarding claim 12, again, Levinson discloses that the memory 166 stores digital values corresponding to current operating conditions of the transceiver including temperature and bias current (column 9, lines 28-32) but does not specifically disclose storing current operating values of supply voltage, output power of the laser, or a received optical power of the photodiode.

However, Levinson discloses that the analog to digital conversion circuitry receives analog signals corresponding to these three values and converts them to digital values. An internal supply voltage of the optoelectronic transceiver is measured at node "B" as shown in Figure 3 (column 5, lines 1-7); output power of the laser transmitter is measured using the output of back facet photodiode 116 (column 8, lines 5-8); and a received optical power of the

photodiode receiver is measured using the output of peak detector 242 at the receiver (column 7, lines 31-37). Regarding claim 12, it would have been obvious to a person of ordinary skill in the art to specifically further store these three values in addition to the ones already explicitly stored in the system disclosed by Levinson in order to provide the user with additional information about the conditions of the transceiver throughout its operating life.

Regarding claim 13, Levinson discloses that the adjusting includes scaling the control signals by the adjustment value. Although Levinson does not specifically use the term "scaling," it would be well understood in the art that a particular change caused by the stored adjustment value would translate to a corresponding change in one or more control signals sent to the hardware, wherein the change in the control signals would correspond to an upward or downward scaling of the signals.

Regarding claims 14, 34, and 38, Levinson discloses a circuit for an optoelectronic transceiver (Figure 3), which includes a laser transmitter 100 and a photodiode receiver 224, the circuit comprising:

analog to digital conversion circuitry (multichannel A/D converter 170) configured to convert analog signals corresponding to operating conditions of the optoelectronic transceiver into digital values;

memory (EEPROM 166; column 9, lines 1-35) configured to store the digital values in predefined locations identified by unique addresses (column 4, lines 20-32), where the digital values stored in the predefined locations include a temperature of the optoelectronic transceiver (measured using temperature sensor 152; column 4, lines 36-40) and a laser bias current of the laser transmitter (column 5, lines 8-10), and

an interface (including RS232 I/O port 200) configured to enable a host (computer 202) having at least one of the addresses to read from the predefined locations in memory (column 6, lines 40-46; column 15, lines 25-66).

Further regarding claims 14, 34, and 38 again, Levinson discloses that the memory 166 stores digital values corresponding to current operating conditions of the transceiver including temperature and bias current (column 9, lines 28-32) but does not specifically disclose storing current operating values of supply voltage, output power of the laser, or a received optical power of the photodiode.

However, Levinson discloses that the analog to digital conversion circuitry receives analog signals corresponding to these three values and converts them to digital values. An internal supply voltage of the optoelectronic transceiver is measured at node "B" as shown in Figure 3 (column 5, lines 1-7); output power of the laser transmitter is measured using the output of back facet photodiode 116 (column 8, lines 5-8); and a received optical power of the photodiode receiver is measured using the output of peak detector 242 at the receiver (column 7, lines 31-37). Regarding claims 14, 34, and 38, it would have been obvious to a person of ordinary skill in the art to specifically further store these three values in addition to the ones already explicitly stored in the system disclosed by Levinson in order to provide the user with additional information about the conditions of the transceiver throughout its operating life.

Further regarding claim 34 in particular, Levinson does not specifically disclose that each of the digital values is a 16 bit number. However, it is well known in the art that digital signals stored in memory may be 16-bit numbers; 8-, 12-, or 16-bit digital values are all commonly known types of digital values used in processing elements such as already disclosed by

Levinson. Regarding claim 34, it would have been obvious to a person of ordinary skill in the art to specifically use 16-bit digital values in the system disclosed by Levinson as an engineering design choice of a length for the digital values depending on the input/output specifications of the processing elements. The claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

Further regarding claim 38 in particular, Levinson does not explicitly disclose a housing, but housings are generally well known in the art and it is well understood in the art that electrical and optical components such as disclosed by Levinson are commonly protected by housings. Regarding claim 38, it would have been obvious to a person of ordinary skill in the art to include a housing in the system disclosed by Levinson in order to protect the various components from disturbance or damage.

Regarding claim 15, Levinson discloses that each of the predefined locations are associated with a unique address in the memory (column 9, lines 1-35).

Regarding claim 16, Levinson does not specifically disclose that each of the digital values is a 16 bit number. However, it is well known in the art that digital signals stored in memory may be l6-bit numbers; 8-, 12-, or 16-bit digital values are all commonly known types of digital values used in processing elements such as already disclosed by Levinson. It would have been obvious to a person of ordinary skill in the art to specifically use 16-bit digital values in the system disclosed by Levinson as an engineering design choice of a length for the digital values depending on the input/output specifications of the processing elements. The claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but

merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

Regarding claims 17, 18, and 35, Levinson discloses a temperature sensor 152 for measuring the temperature of the optoelectronic transceiver and a supply voltage sensor (node "B" shown in Figure 3; column 5, lines 1-7) for measuring the supply voltage of the optoelectronic transceiver.

Regarding claims 19 and 36, Levinson discloses that the interface is also configured to enable the host to read from and write to host-specified addresses within the memory (column 6, lines 40-59; column 15, lines 25-66).

Regarding claim 20, Levinson discloses comparison logic configured to compare at least one of the digital values with a limit value to generate a flag value. Specifically, Levinson discloses that the microcontroller 162 includes logic configured to compare the digital values with limit values to produce indications that the device is failing (column 9, lines 1-35; column 10, lines 66-67; column 11, lines 1-11; column 12, lines 5-11). Examiner respectfully notes that such failure indications (which include sending a signal to turn on a failure indication LED, for example) are "flag values" (column 12, lines 5-11).

Regarding claim 21, Levinson discloses operation disable circuitry configured to disable operation of at least part of the optoelectronic transceiver in response to a signal based on the flag value. For example, Levinson discloses that when the temperature exceeds a limit, a part of the optoelectronic transceiver is shut down in response to this failure condition (column 9, lines 50-67; column 10, lines 1-4). Levinson do not explicitly label a part of their circuit as "operation disable circuitry," but Levinson clearly discloses circuitry that controls the optoelectronic device

(including multichannel D/A converter 180 which sends signals to laser diode 100) and also discloses that the system may disable the device. It would be well understood in the art that Levinson inherently disclose that the circuitry for controlling the device is inherently configured to disable the device if desired.

Regarding claim 23, Levinson discloses that the limit value is dependent on the temperature of the optoelectronic transceiver (column 9, lines 50-67; column 10, lines 1-4).

Regarding claim 24, Levinson discloses control circuitry (including microcontroller 162 and multichannel D/A converter 180) configured to generate control signals to control operation of the laser transmitter in accordance with one or more values stored in memory.

Regarding claim 25, Levinson discloses that the control circuitry includes operation disable circuitry configured to disable operation of at least part of the optoelectronic transceiver (column 10, lines 2-4).

Regarding claim 26, Levinson discloses that the memory further comprises one or more memory arrays for storing information related to the optoelectronic transceiver (Figure 7; column 9, lines 1-35).

Regarding claims 27-30 and 37, Levinson discloses that a portion of the memory is reserved for optional warning or alarm flags such as a high laser bias current warning/alarm flag. Specifically, Levinson discloses that the system maintains certain failure criteria (such as exceeding a maximum bias current level), wherein the if the criteria are met, the system issues a failure indication warning (column 9, lines 1-14; column 11, lines 1-11; column 12, lines 5-11).

Examiner respectfully notes that although other claims in the present application recite flag values in greater detail (such as claim 1, which specifically recites the flag values are values

generated by comparing digital values with limit values, etc), claims 27-30 do not recite such further details regarding the flags. Levinson disclose warning/alarm flags stored in memory comprising predetermined limits such as a maximum bias current value; an input from the optoelectronic device is received by the controller and compared to a "flag," and a warning/alarm may be generated based on this comparison.

Regarding claim 33, Levinson does not specifically disclose a password, but password protection is generally well known in the computing art, and it would have been obvious to a person of ordinary skill in the art to store a password in the system described by Levinson in view of Swartz in order to protect the system from unauthorized users. One in the art would have been particularly motivated to include a password since Levinson discloses that a user may write to and alter the memory controlling the device (column 15, lines 25-67).

5. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levinson in view of Swartz as applied to claims 1 and 4 respectively above, and further in view of Stephenson (US 2002/0027688 A1).

Regarding claims 2 and 5, Levinson in view of Swartz describe a system as discussed above with regard to claims 1 and 4 respectively, including operation disable circuitry configured to disable the device if desired. Levinson does not specifically disclose a disable pin. However, Stephenson teaches an optical communications system (Figures 2-4), including an optoelectronic transceiver (laser transmitter 110 and photodiode receiver 134) such as already disclosed by Levinson, and further teaches that the optoelectronic transceiver may include a disable pin 115 (Figure 4). Regarding claims 2 and 5, it would have been obvious to a person of ordinary skill in the art to further include a disable pin as taught by Stephenson in the system described by

Levinson in view of Swartz in order to provide a way to clearly cut off the transceiver and prevent the various feedback loops in the system from activating or controlling the transceiver in response to the loss of output (Stephenson, page 6, paragraph [0045]).

6. Claims 22, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levinson as applied to claims 21 and 14 above, and further in view of Stephenson.

Regarding claims 22, and 31 and 32 Levinson discloses a system as discussed above with regard to claims 21 and 14 respectively, including operation disable circuitry configured to disable the device if desired. Levinson does not specifically disclose a disable pin.

However, Stephenson teaches an optical communications system (Figures 2-4), including an optoelectronic transceiver (laser transmitter 110 and photodiode receiver 134) such as already disclosed by Levinson, and further teaches that the optoelectronic transceiver may include a disable pin 115 (Figure 4). Regarding claims 22 and 31, it would have been obvious to a person of ordinary skill in the art to further include a disable pin as taught by Stephenson in the system disclosed by Levinson in order to provide a way to clearly cut off the transceiver and prevent the various feedback loops in the system from activating or controlling the transceiver in response to the loss of output (Stephenson, page 6, paragraph [0045]).

Further regarding claim 31 in particular, and regarding claim 32, Levinson does not specifically disclose that wherein a portion of the memory is reserved for an optional indication of a state of a disable. However, again, Stephenson teaches that when a transceiver in a feedback controlled system needs to be disabled, the system should prevent the feedback loops from responding to the loss of output (page 6, paragraph [0045]). It would be well understood in the art that storing a state of the disable would allow a controller to properly recognize that the

transceiver has been disabled. Regarding claims 31 and 32, it would have been obvious to a person of ordinary skill in the art to store a state of disable as suggested by Stephenson in the system disclosed by Levinson in order to prevent the system from sending inappropriate control signals in response to the loss of output caused by a transceiver disable function.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levinson in view of Swartz as applied to claim 4 above, and further in view of King et al. (US 5,812,572 A).

Regarding claim 7, Levinson in view of Swartz describe a system as discussed above with regard to claim 4. Levinson further discloses generating control signals based on a temperature of the optoelectronic transceiver (column 11, lines 1-5) but does not specifically disclose a temperature look up table. However, King et al. teach a related system including a circuit for controlling a laser transmitter (Figure 1) and further teach temperature look up table used in generating control signals based on a temperature of the transmitter (column 13, lines 60-62; column 14, lines 1-10). It would have been obvious to a person of ordinary skill in the art to include a look-up table as suggested by King et al. in the system described by Levinson in view of Swartz in order to more quickly provide control signals that are adjusted for temperature conditions (compared to recalculating such an adjustment every time a control signal is required).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
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Art Unit 2633